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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,077	10/30/2003	Timothy Joseph Dalton	YOR920030377US1	8111

7590

01/30/2006

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EXAMINER

FORTUNA, ANA M

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/697,077	Applicant(s) DALTON ET AL.	
	Examiner Ana M. Fortuna	Art Unit 1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 14-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 24 is/are rejected.
- 7) ☒ Claim(s) 26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/30/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-13, 25, 26, drawn to a composite membrane, classified in class 210, subclass 490.
 - II. Claims 14-24, drawn to a process of making a microporous filter, classified in class 264, subclass 628.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the membrane as claimed is not limited to the process of making including etching as in claims 14, 22, or CVD of claim 23.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Robert M. Trepp on 1/19/06 a provisional election was made without traverse to prosecute the invention of group I, claims 1-13, and 25-26. Affirmation of this election must be made by applicant in replying to this Office action. Claims 14-14 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

DETAILED ACTION

Claim Rejections - 35 USC § 112

7. Claims 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 10, the term "dimensions standard in the microelectronic industry" is indefinite as to what dimensions are intended. In claim 11, the term "about 1 micron thick or less" is indefinite as to the lower thickness range.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1723

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 5, 6, 7, 8, 9, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Goldsmith et al (US 5,44,581)(hereinafter patent '581). Patent '581 discloses a composite asymmetric membrane including a support made from a porous ceramic selected from silica, silicon nitride (abstract, column 2, lines 23-47), and a microporous polymeric membrane layers made from polymers selected from polysulfone, polyether sulfone between other (column 2, lines 37-37-63, column 4, lines 37-61, column 5, lines 55-66).

The membrane thickness, as claimed in claim 11 is also disclosed (column 6, lines 2-5, and last two lines, column 7, lines 11-13, and column 8, lines 23-47).

10. Claims 1-4, 9, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kelemen et al (US 5,716,526)(hereinafter Kelemen). Kelemen discloses a composite membrane including a support or substrate and at least one layer on top of the support (abstract). The support and selective layers are made from silicon oxide (see column 6, lines 49-68). Kelemen also discloses the membrane as microporous, and with the membrane layer having pore size less than the pore size of the substrate (see Fig. 4b, column 1, lines 10-13).

The asymmetry of the membrane is further disclosed (see column 4, lines 61-68, column 5, lines 1-2).

The membrane thickness of claim 11 is disclosed 9see column 5, last paragraph).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 10, 12-13, 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelemen et al (US 5,716,526)(hereinafter Kelemen) as applied to claim 1 above or Kelemen further in view of Ruckus et al (US 6,942,921)(hereinafter patent '921).

Kelemen, discussed above, fails to disclose the substrate or support as wafer, and the method of forming the micropores. It would have been obvious to one skilled in the art at the time the invention was made to select any suitable substrate made from the claimed composition, and meeting the conditions required in claim 1; the dimensions of the support will be depending on the membrane surface area desire in the final product. Regarding claims 12-13, 25, Kelemen fails to provide the microporous membrane lithographically patterned, or spin on glass.

Patent '921 suggests making porous silicone oxide membrane (electrodes) layers by lithographically patterning forming traces of small sizes, e.g. 0.18 and 0.13 micrometer (column 13, lines 25-60). The spin on glass is also disclosed (see column 13, last two lines, and column 14, lines 1-31, column 15, lines 27-64). It would have been obvious to one skilled in the art at the time the invention was made to have a composite membrane, as disclosed by Kelemen, including more than one silicon layer, and further form openings on the top layer, by techniques conventional in the art as suggested in

patent '921, e.g. lithographically patterning, etching, to form the micropores or openings with widths within the micropores range. Patent '921 suggest the method for silicon oxide layers. The method of patterning silicon layers on a silicon substrate and forming perforation by lithographically patterning/etching is disclosed in '921 (column 2, lines 54-68, column 5, lines 59-68, column 6, lines 59-65, column 7, lines 42-68, and column 8, lines 16-22). It would have been obvious to one skilled in the art at the time the invention was made to form a composite from layers of silicon oxide as substrate, and a further layer of silicon nitrile, and for pore or channel by lithographically patterning the top layer to a desire aperture (pore), as suggested in '921.

Allowable Subject Matter

13. Claim 26 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

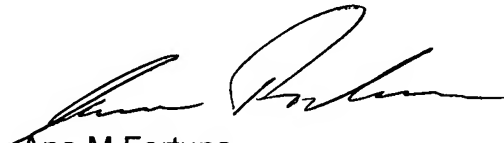
14. The following is a statement of reasons for the indication of allowable subject matter: the membrane or composite structure comprising a spin on glass composition as claimed in claim 26 is not disclosed or suggested by the prior art of record. The asymmetric composite membrane including any of the components of claim 26 is not suggested in the prior art of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana M. Fortuna whose telephone number is (571) 272-1141. The examiner can normally be reached on 9:30-6:00 M-F.

Art Unit: 1723

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ana M Fortuna
Primary Examiner
Art Unit 1723

AF
January 23, 2006